Abstracts

General Analysis of a Parallel-Plate Waveguide Inhomogeneously Filled with Gyromagnetic Media

M. Mrozowski and J. Mazur. "General Analysis of a Parallel-Plate Waveguide Inhomogeneously Filled with Gyromagnetic Media." 1986 Transactions on Microwave Theory and Techniques 34.4 (Apr. 1986 [T-MTT]): 388-395.

The boundary value problem for a parallel-plate waveguide filled with inhomogeneous gyromagnetic medium is expressed and thoroughly examined in terms of a linear operator equation. A suitable vector definition of transverse mode functions is given and their completeness and orthogonality are proved. Applying a new set of continuity conditions for field components normal to the cross-sectional interface, the transfer matrix for the multilayered parallel-plate waveguiding structure is determined and used to formulate a characteristic equation. The analysis is illustrated by the numerical investigation of eigenfunctions and eigenvalues of a two layer ferrite-air guide.

❑ Return to main document.